AMENDMENTS TO THE CLAIMS

1. (currently amended) A position sensor for sensing linear or radial position, comprising:

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at least two magnets;

a singular ferrous plate, having said at least two magnets located at spaced locations along said ferrous plate, said at least two magnets being oriented such that at least one magnet's north pole is directed toward said ferrous plate and at least one magnet's south pole is directed toward said ferrous plate; and

a magnetic flux responsive device, located proximate said ferrous plate, said magnetic flux responsive device closer to said ferrous plate than to any of said at least two magnets.

2. (original) The position sensor of claim 1, wherein said magnetic flux responsive device is at least one of a Hall effect device and a programmable Hall effect device.

3. (original) ~~The~~ A position sensor for sensing linear or radial position, comprising: ~~of claim 1, wherein said~~

at least two magnets;

a least one ferrous plate, having said at least two magnets located at spaced locations along said at least one ferrous plate, said at least two magnets being oriented such that at least one magnet's north pole is directed toward at least one said ferrous plate and at least one magnet's south pole is directed toward at least one said ferrous plate; and

at least two magnetic flux responsive devices including a first magnetic flux responsive device and a second magnetic flux responsive device, said first magnetic flux responsive device a

fixed distance from said second magnetic flux responsive device, said first magnetic flux responsive device and said second magnetic flux responsive device located proximate to said at least one ferrous plate ~~is substantially flat~~.

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4. (withdrawn) The position sensor of claim 1, wherein said ferrous plate varies in at least one of width, thickness and shape.

5. (currently amended) A position sensor for sensing linear or radial position, comprising:

at least four magnets, each of said at least four magnets producing a magnetic flux;

a first ferrous plate including a first side and a second side, said first ferrous plate having two of said at least four magnets located along said first side at spaced locations along said first ferrous plate, said two magnets being oriented such that a north pole of one of said two magnets is directed toward said first ferrous plate and a south pole of an other of said two magnets is directed toward said first ferrous plate;

a second ferrous plate including a first side and a second side, said second ferrous plate having an other two of said at least four magnets located along said first side at spaced locations along said second ferrous plate, said two magnets being oriented such that a north pole of one of said two magnets is directed toward said second ferrous plate and a south pole of an other of said two magnets is directed toward said second ferrous plate, said first ferrous plate and said second ferrous plate being generally parallel and spaced apart; and

at least one magnetic flux responsive device disposed between said second side of said first ferrous plate and said second side of said second ferrous plate, said at least one magnetic flux

responsive device at least partially responsive to said magnetic flux from said at least four magnets.

6. (original) The position sensor of claim 5, wherein said magnetic flux responsive device is at least one of a Hall effect device and a programmable Hall effect device.

7. (currently amended) The position sensor of claim 5, further comprises at least one magnetic shunt disposed proximate to at least two of said at least four magnets, such that said at least one magnetic shunt shunts said magnetic flux.

8. (currently amended) The position sensor of claim 5, wherein said first ferrous plate and said second ferrous plate are both generally shaped as one of circular and cylindrical, said first ferrous plate being discontinuous thereby defining an air gap and said second ferrous plate ~~each having~~ being discontinuous thereby defining an air gap.

9. (currently amended) The position sensor of claim 5, ~~further comprises a plurality of magnetic ferrous plate assemblies, each magnetic ferrous plate assembly comprising:~~

~~four magnets; and~~

~~two linear ferrous plates, each of said two linear ferrous plates having two of said four magnets located at spaced locations along each of said two linear ferrous plates, said two linear ferrous plates being generally parallel with each other and spaced apart; each said magnetic ferrous plate assembly configured to allow~~ wherein said at least one magnetic flux responsive

device is configured to traverse beyond said first ferrous plate and said second ferrous plate ~~therethrough~~.

10. (withdrawn) The position sensor of claim 5, wherein at least one of said first ferrous plate and said second ferrous plate varies in at least one of width, thickness and shape.

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11. (currently amended) A position sensor for sensing radial position, comprising:

two magnets each producing a magnetic flux, said two magnets including a first magnet and a second magnet;

two ferrous plates being generally shaped as one of circular and cylindrical, each said ferrous plate having an air gap, said two ferrous plates including a first ferrous plate and a second ferrous plate, said first magnet being coupled to said first ferrous plate, said first magnet being oriented with a north pole disposed toward an end of said air gap in said first ferrous plate and a south pole disposed toward an other end of said air gap, said second magnet being coupled to said second ferrous plate, said second magnet being oriented with a north pole disposed toward an end of said air gap in said second ferrous plate and a south pole disposed toward an other end of said air gap, said first ferrous plate and said second ferrous plate being generally parallel and spaced apart; and

at least one magnetic flux responsive device disposed between said first ferrous plate and said second ferrous plate, said at least one magnetic flux responsive device at least partially responsive to said magnetic flux from said two magnets.

12. (original) The position sensor of claim 11, wherein said magnetic flux responsive device is at least one of a Hall effect device and a programmable Hall effect device.

13. (currently amended) The position sensor of claim 11, further comprising at least one magnetic shunt disposed proximate to at least one of said two magnets, such that said at least one magnetic shunt shunts said magnetic flux of at least one of said two magnets.

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14. (original) The position sensor of claim 11, wherein said north pole of said first magnet is generally directed in a direction contra to said north pole of said second magnet.

15. (withdrawn) The position sensor of claim 11, wherein at least one of said two ferrous plates varies in at least one of width, thickness and shape.

16. (original) The position sensor of claim 11, wherein said at least one magnetic flux responsive device produces an electrical signal relative to the sensed magnetic flux density.

17. (currently amended) A method for making and installing a device for sensing one of linear and radial position, comprising:

spacing a first ferrous plate and a second ferrous plate apart in a generally parallel manner;

orienting two magnets toward said first ferrous plate and two additional magnets toward said second ferrous plate such that a north pole of one said magnet and a south pole of an other said magnet are directed toward said first ferrous plate and a north pole of yet an other said magnet and a south pole of still yet another magnet is directed toward said second ferrous plate;

positioning a magnetic flux responsive device between said first ferrous plate and said second ferrous plate such that movement of said magnetic flux responsive device relative to said first ferrous plate and said second ferrous plate alters the magnetic field in said magnetic flux responsive device said magnetic flux responsive device being closer to said first ferrous plate and said second ferrous plate than to said two magnets; and

mounting said ferrous plates to a structure including one of a foot pedal, a throttle, an EGR valve, a shaft and a headlight leveling system, and said magnetic flux responsive device on an other structure, said magnetic flux responsive device and said ferrous plates configured to move relative to each other.